

FIGURE 1 - Pervasive Commerce System

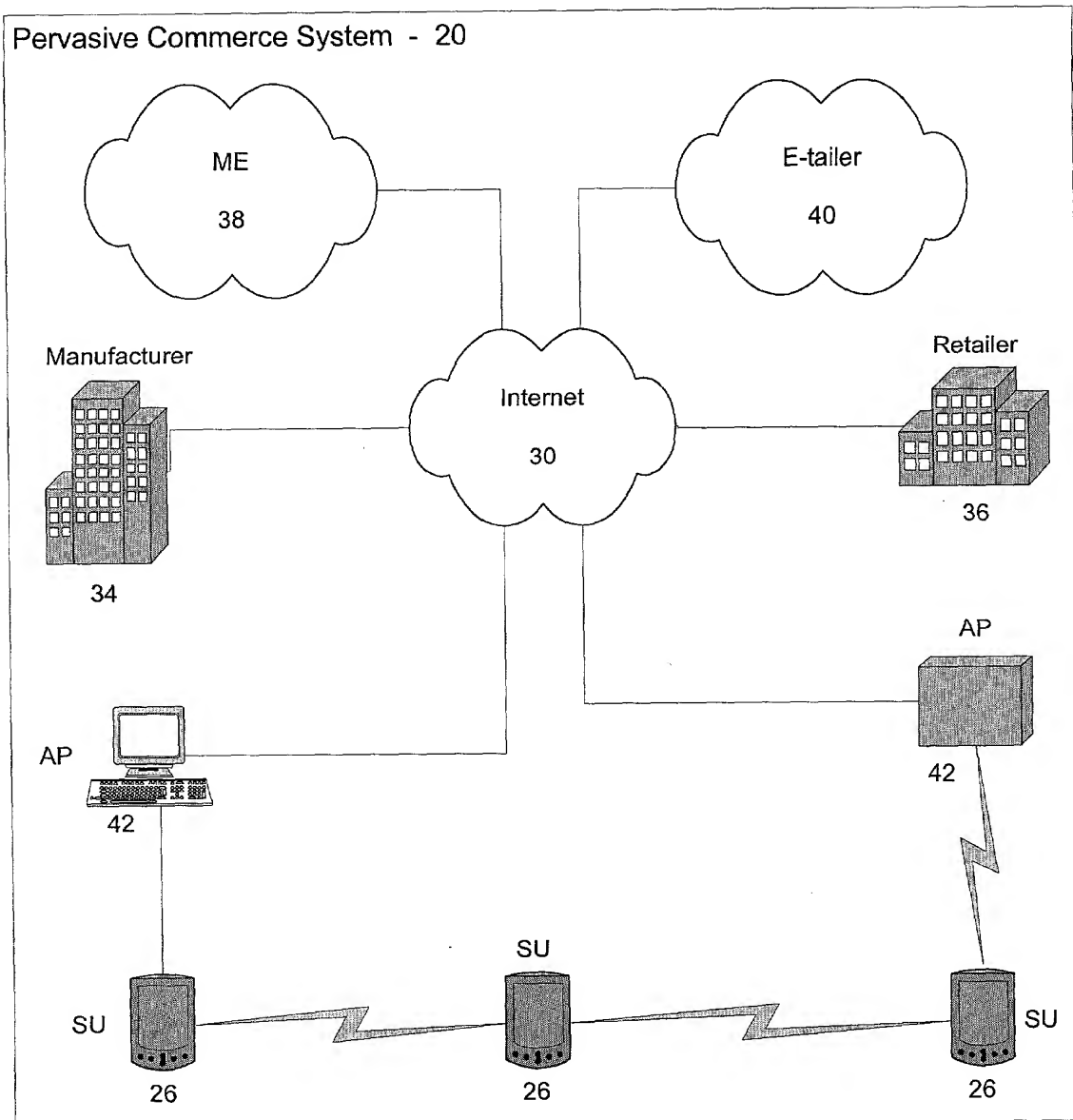


FIGURE 2 - Generic Case Structure

Item Data Block ("I" Block)	
Case Information	ID, version, etc., for the entire case.
Link Information	Relationship to other cases.
Item Information	ID, name, description, etc., for the item.
ME Public Key	Case key or ME key version, used for encryption and whose private key peer is used in "I" and "O" Block signatures.
Distributor Public Key	Assigned to or received from Distributor; private key is used in "D" Block signature.
Block Signature	ME signature of "I" Block

Object Block ("O" Block)	
Object Information	ID, type, description, encoding, size, etc., for the contained digital object.
Object	Image, music, digital asset, etc.
Block Signature	ME signature of "O" Block (via private key peer to ME Public Key).

Distributor Data Block ("D" Block)	
Distributor Information	ID, name, information, etc., for Distributor.
Item Information	Encrypted wholesale price, etc., of item.
Item Options	Selectable features and options of item.
Mutation Rules	Controlling application behavior for case mutation (e.g., expiration date).
Passer Public Key	Assigned to or received from Passer, whose private peer is used in "P" Block signature.
Block Signature	Distributor signature of "D" Block (via private key peer to Distributor Public Key).

Passer Data Block ("P" Block)	
Passer Information	ID, name, etc., of Passer.
Item Information	Sales price, comments, etc., about item.
Receiver Public Key	Assigned to or received from Receiver.
Block Signature	Passer signature of "P" Block (via private key peer to Passer Public Key).

Receiver Data Block ("R" Block)	
Receiver Information	ID, name, etc., of Receiver.
Block Signature	Receiver signature of "R" Block (optional).

FIGURE 3 - Pervasive Commerce Case Layout

Case

Product Data		
Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)		
ME Public Key Version	Case Version (Template)	Distributor Public Key
Case ID	Case SubID	Product Data Signature (ME)

Distributor Data		
Distributor Info (name, address, phone, URL, promotion, start date, stop date, etc)		
Encrypted [Distributor Price]	Product selectable features	Sales Associate Public Key
Distributor Comments	Mutations	Distributor Data Signature

Sales Associate		
Sales Associate Comments		
Retail Price	Sales Associate ID	Consumer Public Key
		Sales Associate Data Signature

Consumer		
Consumer Comments		
Consumer ID	Product Feature Selections	Consumer Password (encrypted)
Consumer Account Name	Local Purchase Time/Date	Consumer Data Signature
Credit Card selection	Billing Address selection	Purchase Price

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graph TD; subgraph Case; subgraph ProductData [Product Data]; PD[Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)]; ME[ME Public Key Version]; CV[Case Version (Template)]; DP[Distributor Public Key]; CID[Case ID]; CSID[Case SubID]; PDS[Product Data Signature (ME)]; end; subgraph DistributorData [Distributor Data]; DI[Distributor Info (name, address, phone, URL, promotion, start date, stop date, etc)]; EDP[Encrypted (Distributor Price)]; PSF[Product selectable features]; SAPK[Sales Associate Public Key]; DC[Distributor Comments]; M[Mutations]; DDS[Distributor Data Signature]; end; subgraph SalesAssociate [Sales Associate]; SAC[Sales Associate Comments]; RP[Retail Price]; SAID[Sales Associate ID]; CPK[Consumer Public Key]; SASD[Sales Associate Data Signature]; end; subgraph Consumer [Consumer]; CC[Consumer Comments]; CID2[Consumer ID]; PFSP[Product Feature Selections]; CPP[Consumer Password (encrypted)]; CAN[Consumer Account Name]; LPTD[Local Purchase Time/Date]; CDS[Consumer Data Signature]; CCS[Credit Card selection]; BAS[Billing Address selection]; PP[Purchase Price]; end; DDS --> CPK; SASD --> CDS; end;
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FIGURE 4 – Generic Case Flow

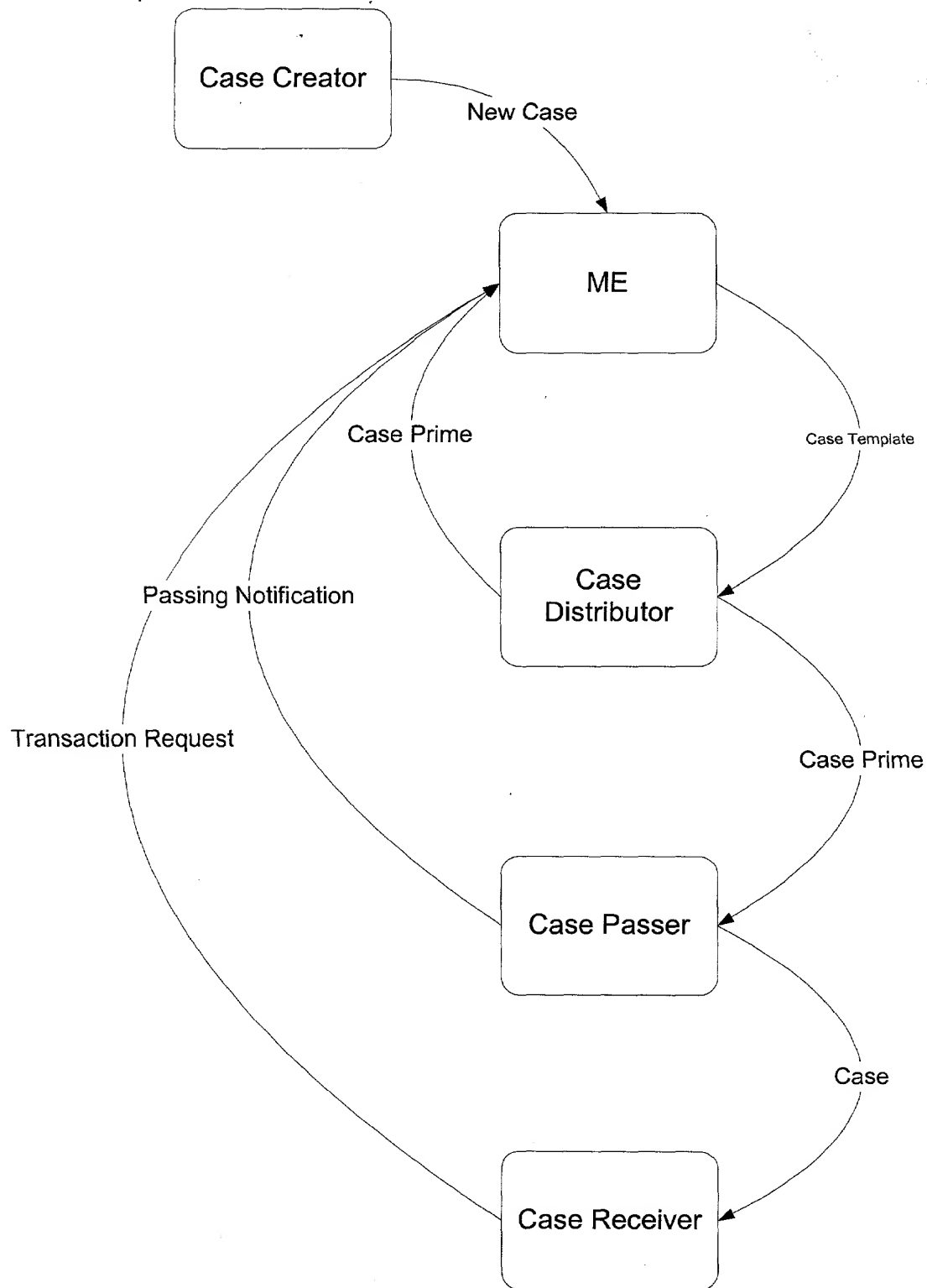


FIGURE 5 - New Case Template Layout

Case

Item Data

Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)

ME Public Key Version Case Version (Template) Distributor Public Key

Case ID Case SubID Product Data Signature (ME)

Dynamic Data

Product Feature Selection Choices

FIGURE 6 - Case Prime Layout

Case

Item Data

Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)

ME Public Key Version Case Version (Template) Distributor Public Key

Case ID Case SubID Product Data Signature (ME)

Digital Object(s)

Object Data Digital Object Signature (ME)

Distributor Data

Distributor Info (name, address, phone, URL, promotion, start date, stop date, etc)

Encrypted [Distributor Price] Product selectable features Sales Associate Public Key

Distributor Comments Mutations Distributor Data Signature

Dynamic Data

Distributor Price

FIGURE 7 - Passed Case Layout

Case

Item Data		
Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)		
ME Public Key Version	Case Version (Template)	Distributor Public Key
Case ID	Case SubID	Product Data Signature (ME)

Digital Object(s)	Object Data	Digital Object Signature (ME)
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Distributor Data		
Distributor Info (name, address, phone, URL, promotion, start date, stop date, etc)		
Encrypted [Distributor Price]	Product selectable features	Sales Associate #1 Public Key
Distributor Comments	Mutations	Distributor Data Signature

Passer (Sales Associate) Data		
Encrypted [Sales Associate Price]	Sales Associate ID	Sales Associate Data Signature
Sales Associate Comments	Consumer Public Key	

Dynamic Data
Sales Associate Price




FIGURE 8 - Complete Case Layout

Case

Item Data		
Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)		
ME Public Key Version	Case Version (Template)	Distributor Public Key
Case ID	Case SubID	Product Data Signature (ME)

Digital Object(s)	Object Data	Digital Object Signature (ME)
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Distributor Data		
Distributor Info (name, address, phone, URL, promotion, start date, stop date, etc)		
Encrypted [Distributor Price]	Product selectable features	Sales Associate #1 Public Key
Distributor Comments	Mutations	Distributor Data Signature

Passer (Sales Associate) Data		
Sales Associate Comments	Consumer Public Key	
Retail Price	Sales Associate ID	Sales Associate Data Signature

Receiver (Consumer) Data	
Consumer Comments	
Consumer ID	Consumer Data Signature

The diagram illustrates the flow of data signatures between different entities in a case layout. Arrows indicate the following connections:

- From **Distributor Data Signature** to **Consumer Public Key**.
- From **Sales Associate Data Signature** to **Consumer Data Signature**.

FIGURE 9 - Consumer Synchronization of PDA with ME

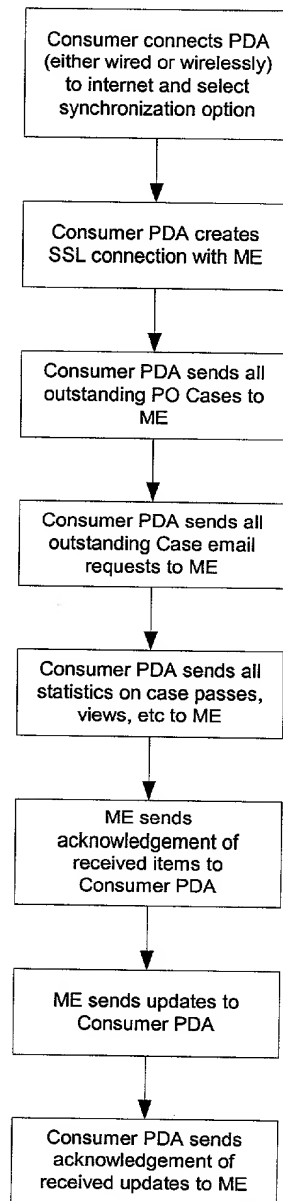


FIGURE 10 - Consumer Makes Case-Based Purchase

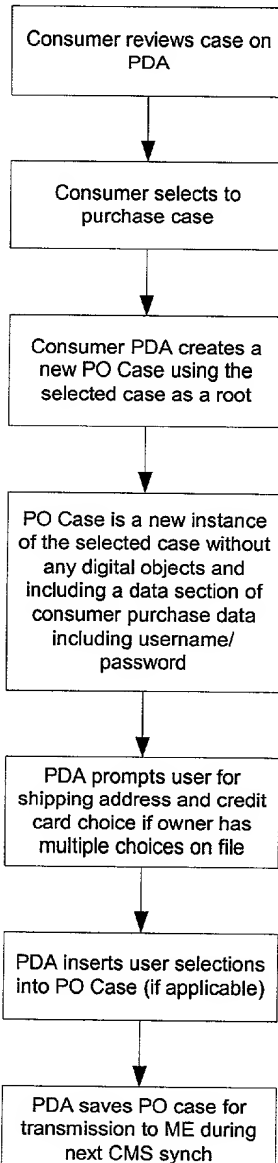


FIGURE 11 - Purchase Request Case Layout

Case

Product Data		
Product Data (product name & description, manufacturer name, address, phone, URL, MSRP, etc)		
ME Public Key Version	Case Version (Template)	Distributor Public Key
Case ID	Case SubID	Product Data Signature (ME)

Distributor Data		
Distributor Info (name, address, phone, URL, promotion, start date, stop date, etc)		
Encrypted [Distributor Price]	Product selectable features	Sales Associate Public Key
Distributor Comments	Mutations	Distributor Data Signature

Sales Associate		
Sales Associate Comments	Consumer Public Key	
Retail Price	Sales Associate ID	Sales Associate Data Signature

Consumer		
Consumer Comments	Consumer Password (encrypted)	
Consumer ID	Product Feature Selections	Consumer Data Signature
Consumer Account Name	Local Purchase Time/Date	Purchase Price
Credit Card selection	Billing Address selection	

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graph TD
    subgraph ProductData [Product Data]
        ME[ME Public Key Version]
        CaseV[Case Version Template]
        DistPub[Distributor Public Key]
        CaseID[Case ID]
        CaseSub[Case SubID]
        ProdSig[Product Data Signature ME]
    end

    subgraph DistributorData [Distributor Data]
        DistInfo[Distributor Info name, address, phone, URL, promotion, start date, stop date, etc]
        EncPrice[Encrypted Distributor Price]
        ProductFeatures[Product selectable features]
        SalesAssocPubKey[Sales Associate Public Key]
        DistComments[Distributor Comments]
        Mutations[Mutations]
        DistDataSig[Distributor Data Signature]
    end

    subgraph SalesAssociate [Sales Associate]
        SalesAssocComments[Sales Associate Comments]
        ConsumerPubKey[Consumer Public Key]
        RetailPrice[Retail Price]
        SalesAssocID[Sales Associate ID]
        SalesAssocDataSig[Sales Associate Data Signature]
    end

    subgraph Consumer [Consumer]
        ConsumerComments[Consumer Comments]
        ConsumerPassword[Consumer Password encrypted]
        ConsumerID[Consumer ID]
        ProductFeatureSelections[Product Feature Selections]
        ConsumerDataSig[Consumer Data Signature]
        ConsumerAccountName[Consumer Account Name]
        LocalPurchaseTimeDate[Local Purchase Time/Date]
        PurchasePrice[Purchase Price]
        CreditCardSelection[Credit Card selection]
        BillingAddressSelection[Billing Address selection]
    end

    DistDataSig --> SalesAssocDataSig
    SalesAssocDataSig --> ConsumerDataSig
```

FIGURE 12 - Sales Associate Passes Case to Sales Associate

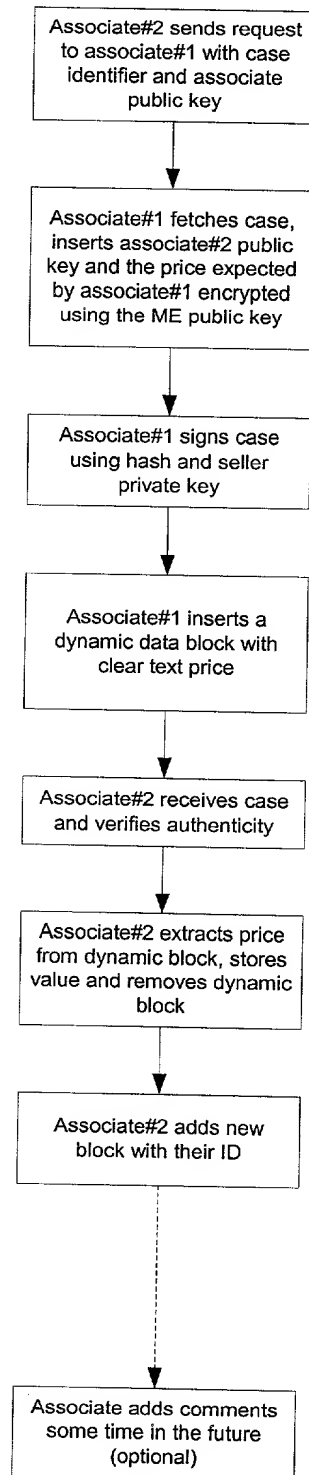


FIGURE 13 - Sales Associate Passes Case to Consumer

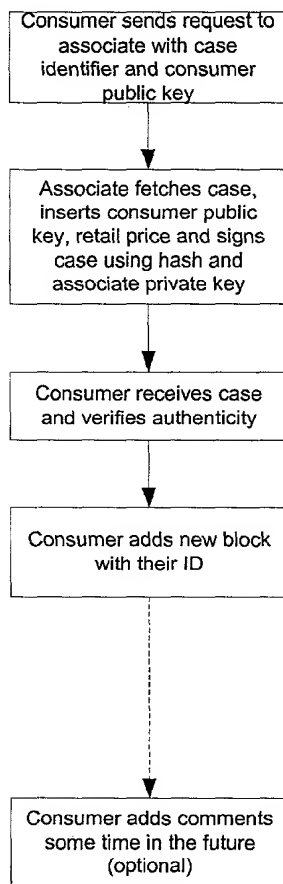


FIGURE 14 - Consumer Passes Case to Consumer

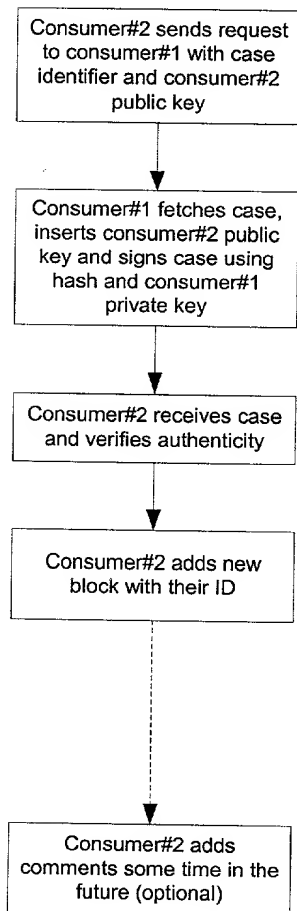
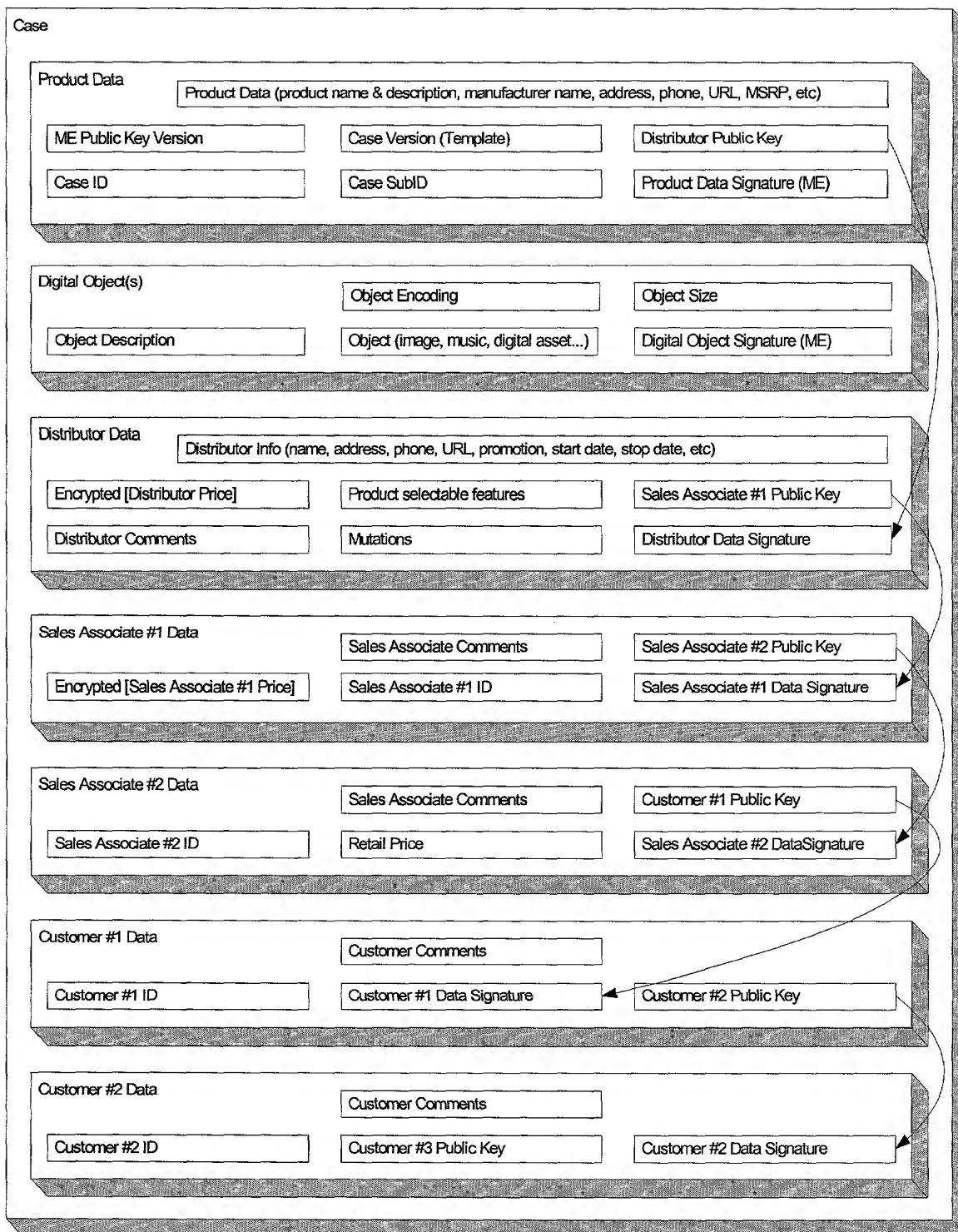


FIGURE 15 - Pervasive Commerce Case Layout



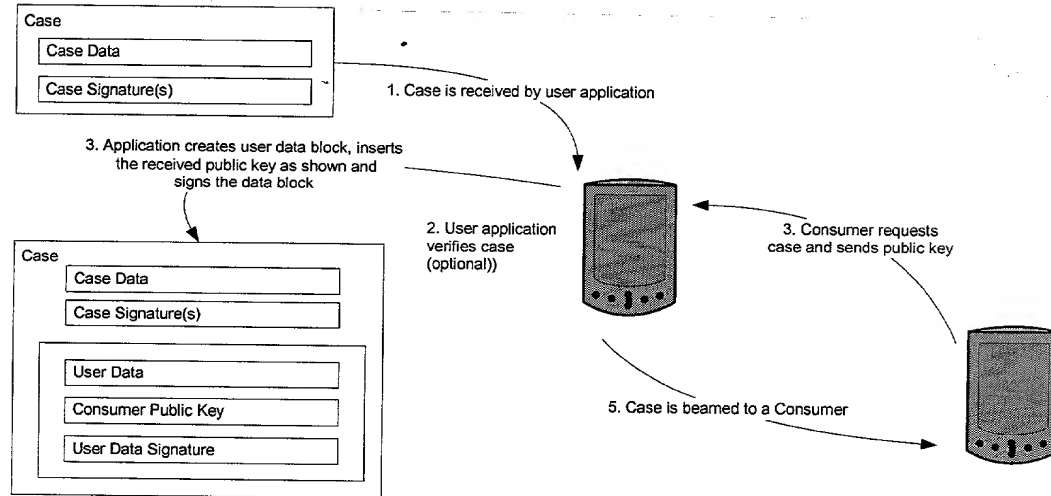


FIGURE 16 – Receiver Selected Key Exchange

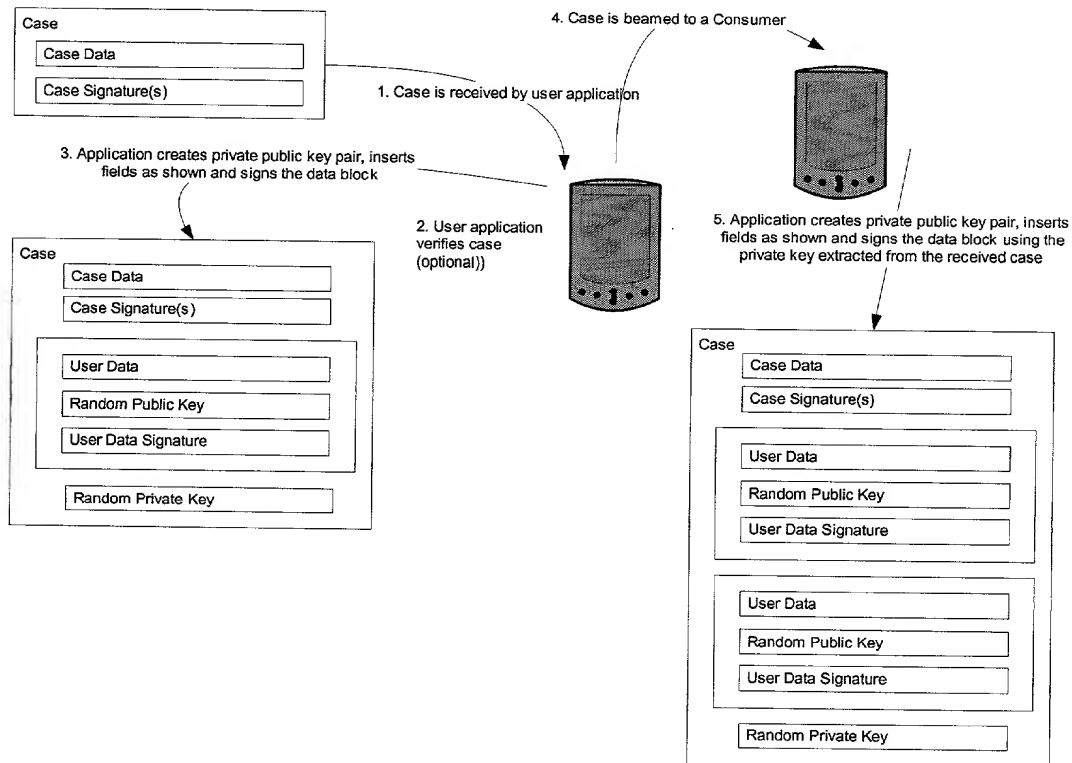


FIGURE 17 – Passer Generated Key Exchange

Digital Object
Object Description (text name and description of the contained digital object)
Object Type (image, video, music clip, music song, music album)
Object Encoding (jpeg, tiff, mpeg, mp3, midi, XrML, zip, pdf)
Object Size (total size of object in bytes)
Object (actual object data)
Digital Object Signature (ME)

FIGURE 18 – DIGITAL OBJECT

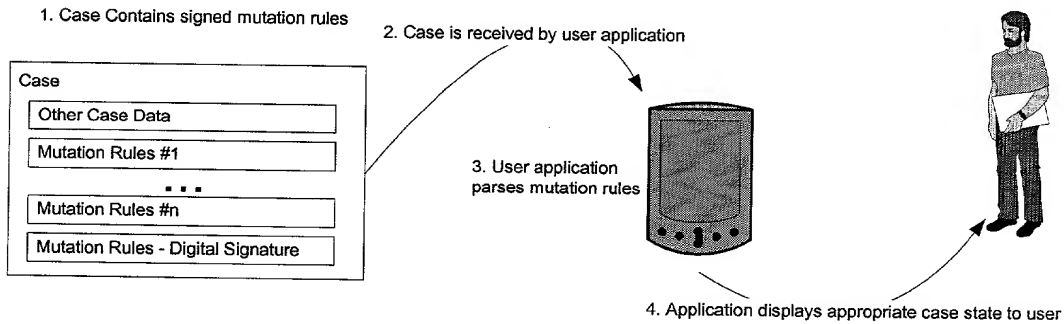


FIGURE 19 – Trusted Case Mutation

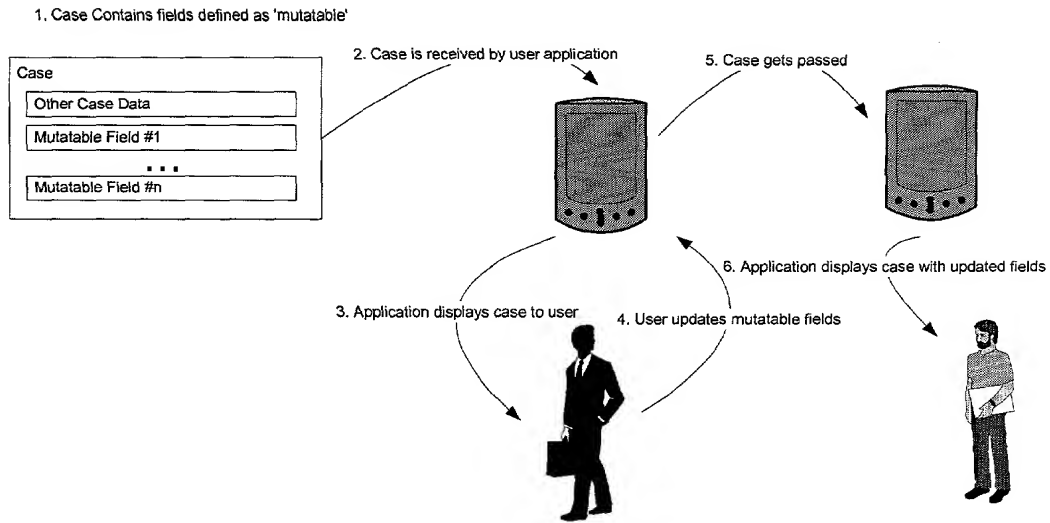


FIGURE 20 – Untrusted Case Mutation